AMENDMENTS TO THE CLAIMS

1. (Currently amended) A fuel control system for metering fuel in a turbine engine, said system comprising:

a boost pump receiving fuel from a fuel tank and increasing pressure of the fuel;

a piston pump including first and second pistons slidably and rotatably mounted in a housing for boosting the fuel pressure to levels required by the turbine engine and for metering an amount of fuel delivered to the turbine engine; and

a speed controlled electric motor driving said piston pump.

2. (Original) The fuel control system of claim 1, wherein the amount of the fuel pumped by said piston pump per revolution is constant, and the fuel flow to the engine is controlled by the speed of said motor.

3. (Original) The fuel control system of claim 1, wherein said motor is a variable speed brushless DC motor and said motor drives both said boost pump and said piston pump.

4. (Currently amended) A fuel control system for metering fuel in a turbine engine, said system comprising:

a boost pump receiving fuel from a fuel tank and increasing pressure of the fuel;

a piston pump for boosting the fuel pressure to levels required by the turbine engine and for metering an amount of fuel delivered to the turbine engine; and

a speed controlled electric motor driving said piston pump; ~~The fuel control system of claim 1, wherein~~ said system further comprising:

a solenoid for directing flow of the fuel to a discharge port when said solenoid is in "on" condition or returns the fuel to an inlet of a fuel filter when said solenoid is in the "off" condition, wherein said solenoid providing an independent on/off control of fuel to the turbine engine.

5. (Original) The fuel control system of claim 4, wherein said system further comprising:

a filter bypass valve for opening should the fuel filter become plugged with dirt and debris;

a filter differential pressure sensor for providing a signal to an aircraft of the turbine engine that filter pressure is increasing and may be nearing a plugged condition;

a pump relief valve for preventing extremely high pressures from being developed should the metered flow discharge port be inadvertently be blocked; and

a fuel temperature sensor for providing a signal proportional to fuel temperature, wherein

said piston pump provides a flow volume proportional to speed, and the fuel temperature being used to calculate mass flow as a function of speed.

6. (Original) The fuel control system of claim 5, wherein said fuel filter pressure bypass valve is a spring loaded valve which bypasses fuel around the fuel filter if the filter is plugged to keep fuel flowing to the piston pump under emergency conditions.

7. (Currently amended) ~~The fuel control system of claim 1,~~ A fuel control system for metering fuel in a turbine engine, said system comprising:

a boost pump receiving fuel from a fuel tank and increasing pressure of the fuel;

a piston pump for boosting the fuel pressure to levels required by the turbine engine and for metering an amount of fuel delivered to the turbine engine; and

a speed controlled electric motor driving said piston pump;

wherein said electric motor is a three phase brushless DC motor and said boost pump is centrifugal.

8. (Original) The fuel control system of claim 7, wherein said system further comprises a resolver for providing signals to an electronic control that provides motor speed control, wherein by controlling the speed of the electric motor a fuel flow proportional to motor speed is achieved.

9. (Original) The fuel control system of claim 1, wherein said piston pump has a very high volumetric efficiency and leakage is very low so that an amount of fuel pumped per revolution of said piston pump is a known constant.

10. (Original) The fuel control system of claim 1, wherein said piston pump pumps the same volume of fuel independent of output pressure.

11. (Original) The fuel control system of claim 1, wherein said electric motor is driven by an electronic speed control wherein by controlling motor speed, fuel flow to the turbine engine is controlled, and fuel flow is directly proportional to the speed of said motor.

12. (Original) The fuel control system of claim 1, wherein said system seeks precision of fuel control that can be achieved with an accuracy of better than +/-3% over a 40:1 fuel flow range.